

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended): A fusion polypeptide comprising a granulocyte colony stimulating factor (G-CSF) domain operably linked to a transferrin (Tf) domain, wherein the ability of the polypeptide to be transported into a cell expressing a transferrin receptor (TfR) gene or the ability of the polypeptide to be transported across a cell expressing a TfR gene via transcytosis is higher than that of the G-CSF domain alone, wherein the polypeptide is a recombinant polypeptide, and wherein said Tf domain is preloaded with at least one iron molecule.
- 2 – 7. (Canceled)
8. (Previously Presented): The fusion polypeptide of claim 1 further comprising a secretion signal at the N-terminus.
9. (Previously Presented): The fusion polypeptide of claim 1, wherein the G-CSF domain is N-terminus.to the Tf domain.
10. (Canceled)
11. (Previously Presented): The fusion polypeptide of claim 10, wherein the Tf domain may bind two iron molecules.

12. (Withdrawn): A nucleic acid comprising a DNA sequence encoding the polypeptide of claim 5 or 9.
13. (Withdrawn): A cell comprising the nucleic acid of claim 12.
14. (Withdrawn): A composition comprising a pharmaceutically acceptable carrier and the polypeptide of claim 1, 4, 5, or 9.
15. (Withdrawn): The composition of claim 14, further comprising sodium bicarbonate, BSA, casein, or a combination thereof.
16. (Withdrawn): A composition comprising a pharmaceutically acceptable carrier and the nucleic acid of claim 12.
17. (Withdrawn): A method of producing a polypeptide, comprising cultivating the cell of claim 13 under conditions that allow expression of the polypeptide.
18. (Withdrawn): The method of claim 17, further comprising collecting the polypeptide.
19. (Withdrawn): A method of enhancing transport of G-CSF into or across a GI epithelial cell, comprising contacting a GI epithelial cell with the polypeptide of claim 1 under conditions that allow transport of the polypeptide into the cell through TfR or transport of the polypeptide across the cell through TfR via transcytosis.

20. (Withdrawn): A method of enhancing transport of a polypeptide into or across a GI epithelial cell, comprising contacting a GI epithelial cell with a polypeptide operably linked to a Tf domain under conditions that allow transport of the Tf-linked polypeptide into the cell through TfR or transport of the Tf-linked polypeptide across the cell through TfR via transcytosis, wherein the molecular weight of the polypeptide is at least 10 kD, the size of the Tf-linked polypeptide is no more than 200 nm, and the ability of the Tf-linked polypeptide to be transported across a cell expressing TfR gene via transcytosis is higher than that of the polypeptide alone.
21. (Withdrawn): The method of claim 20, wherein the molecular weight of the polypeptide is at least 15 kD.
22. (Withdrawn): The method of claim 21, wherein the molecular weight of the polypeptide is at least 20 kD.
23. (Withdrawn): A method of enhancing transport of a polypeptide into or across a GI epithelial cell, comprising contacting a GI epithelial cell with a recombinant protein containing a polypeptide operably linked to a Tf domain under conditions that allow transport of the Tf-linked polypeptide into the cell through TfR or transport of the Tf-linked polypeptide across the cell through TfR via transcytosis, wherein the ability of the Tf-linked polypeptide to be transported into a cell expressing a TfR gene or the ability of the Tf-linked polypeptide to be transported across a cell expressing a TfR gene via transcytosis is higher than that of the polypeptide alone.

24. (Withdrawn): The method of claim 23, wherein the polypeptide includes a G-CSF domain.
25. (Withdrawn): A method of enhancing production of circulating neutrophils in a subject, comprising administering to a subject in need thereof an effective amount of the composition of claim 14.
26. (Withdrawn): The method of claim 25, wherein the subject is undergoing chemotherapy for cancer, or is suffering from or at risk for developing severe chronic neutropenia or a bone marrow transplant-related disorder.
27. (Withdrawn): The method of claim 25, wherein the composition is administered orally.
28. (Withdrawn): The method of claim 25, wherein the composition is administered subcutaneously.
29. (Withdrawn): A method of enhancing production of circulating neutrophils in a subject, comprising administering to a subject in need thereof an effective amount of the composition of claim 16.
30. (Withdrawn): The method of claim 29, wherein the subject is undergoing chemotherapy for cancer, or is suffering from or at risk for developing severe chronic neutropenia or a bone marrow transplant-related disorder.